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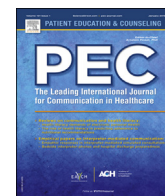
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## Short communication

## Developing and pilot testing a comprehensive health literacy communication training for health professionals in three European countries



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## ABSTRACT

**Objective:** Skills to address different health literacy problems are lacking among health professionals. We sought to develop and pilot test a comprehensive health literacy communication training for various health professionals in Ireland, Italy and the Netherlands.

**Methods:** Thirty health professionals participated in the study. A literature review focused on evidence-informed training-components. Focus group discussions (FGDs) explored perspectives from seventeen professionals on a prototype-program, and feedback from thirteen professionals following pilot-training. Pre-post questionnaires assessed self-rated health literacy communication skills.

**Results:** The literature review yielded five training-components to address functional, interactive and critical health literacy: health literacy education, gathering and providing information, shared decision-making, enabling self-management, and supporting behaviour change. In FGDs, professionals endorsed the prototype-program and reported that the pilot-training increased knowledge and patient-centred communication skills in addressing health literacy, as shown by self-rated pre-post questionnaires.

**Conclusion:** A comprehensive training for health professionals in three European countries enhances perceived skills to address functional, interactive and critical health literacy.

**Practice implications:** This training has potential for wider application in education and practice in Europe.

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## 1. Introduction

Forty-seven percent of people surveyed in eight European countries [1] reported lower health literacy, referring to problems with accessing, understanding, appraising and applying health information [2]. Low health literacy is consistently associated with

poor health outcomes [3]. Health professionals can underestimate health literacy [4,5], or lack recommended communication skills [6,7], increasing misunderstanding among patients [8].

Two reviews [9,10], with studies predominantly from the US and Canada, reported that training increased professionals' communication skills to address health literacy. Nutbeam distinguishes three health literacy domains [11]: "functional" (basic reading and writing skills), "interactive" (communication and applying health information) and "critical health literacy" (information analysis and controlling one's health). Training frequently addresses functional health literacy through clear communication and checking patients' understanding [12–14], whereas interactive and critical health literacy are rarely addressed.

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Professionals can address functional, interactive and critical health literacy [15–17] with patient-centred communication [18–20]. Patient-centred communication involves a shared understanding of the patients' perspective on the problem and empowering patients regarding shared decision making and managing their health [19,21]. Effective patient-centred communication is associated with improved participation and health outcomes [18,22].

This study, part of the European research project "Intervention Research On Health Literacy among Ageing population" (IROHLA), aimed to develop and pilot test a comprehensive health literacy communication training for health professionals in Italy, Ireland and the Netherlands. We investigated which training-components and educational techniques best promote patient-centred communication to address functional, interactive and critical health literacy.

## 2. Methods

### 2.1. Design

We used various methods to develop the training in three stages (Fig. 1).

### 2.2. Literature review

A two-step literature review investigated evidence-informed training-components and educational techniques. First, we selected patient-centred communication interventions to address people's health literacy, from the IROHLA literature survey [23]. Second, we searched professional health literacy training-programs. The databases PubMed, CINAHL, and Psych Info were searched from January 2003 to December 2015. We combined "health literacy" with "education", "training", "professional", "health care provider" and "students". Researchers MSK, PD and RB contributed to the search, selection and review of interventions.

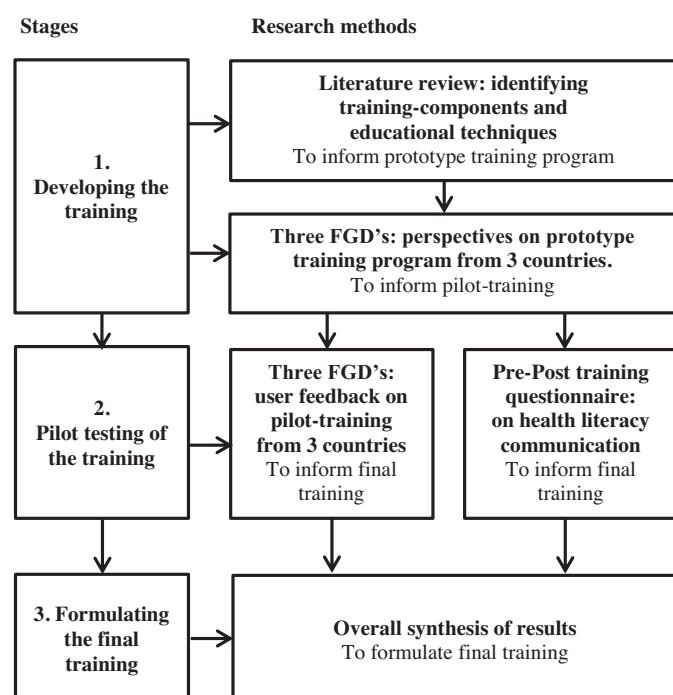


Fig. 1. Design to develop the health literacy communication training.

### 2.3. Focus group discussions

#### 2.3.1. Participants

Similar prevalence rates of low health literacy were reported across Europe [1]. Various field reported European differences in professional trainings [24], organisation of health care [25], and preferences of professionals [26]. To facilitate harmonisation of health literacy training we involved partners from North, West and Southern Europe who could join the study. It was not possible to include Eastern European partners.

We used convenience sampling to involve various health professionals (e.g. medical, nursing, physiotherapy). Professionals cared for older adults with chronic or complex health problems in different settings, being hospitals, medical rehabilitation, and primary care (Appendix A). Health settings had no health literacy policy but paid, to a lesser or greater extent, attention to involvement of patients and patient-centred care.

We conducted three FGDs in stage 1 with in total seventeen professionals (Ireland N=6; Italy N=6, Netherlands N=5). In stage 2 we conducted three FGDs with thirteen other professionals (Ireland N=3; Italy N=5; Netherlands N=5). We followed guidelines for ethical review in each country. Professionals provided written informed consent.

#### 2.3.2. Data collection

FGDs lasted 1–2 h and were audio-recorded. Detailed topic-guides probed discussions (Appendix B). Professionals reviewed the prototype-program in stage 1, and provided feedback in stage 2, immediately after the pilot-training. To decrease probability of a positive bias, we asked professionals for comments to increase the quality of the training and probed them on improvements. Discussions were transcribed verbatim in country-specific languages.

#### 2.3.3. Data analysis

In five steps, we standardised analysis of FGDs across countries using qualitative content analysis [27,28]. 1) We developed an a priori English coding scheme derived from each topic guide. 2) One researcher per country coded the Irish transcript (English language). 3) We discussed inconsistencies in coding and reached consensus on a final coding Scheme. 4) Native speakers coded Dutch and Italian transcripts and added country-specific codes, reviewed by a second researcher. 5) Each country developed an English summary of FGDs, exploring differences between countries and linking codes to overarching themes.

### 2.4. Pre-post questionnaire

We assessed health literacy communication skills with a self-rated pre-post questionnaire of five domains. Twenty questions were based on Mackert et al. [29] and additional items. We analysed outcomes using the Wilcoxon signed rank test in SPSS.

## 3. Results

### 3.1. Training development

#### 3.1.1. Literature review

The literature review yielded 24 professional training-programs and 16 patient-centred interventions to address health literacy. Five training-components informed the prototype-program (Table 1). Most training-programs incorporated "knowledge and awareness of health literacy". Studies were reviewed on patient-centred components [20] to address various health literacy domains [11].

**Table 1**

Objectives and components of the Health Literacy Communication Training.

<i>Objective A. To inform and educate: Professionals know about health literacy problems, their impact, and interventions to tackle health literacy problems</i>	
1. Knowledge and awareness of health literacy	<ul style="list-style-type: none"> <li>- Definition and overview of health literacy [29–48]</li> <li>- Prevalence and risk factors of limited health literacy [29–32,34–36,40,48,49]</li> <li>- Relation of health literacy to health outcomes [29–35,46,49,50]</li> <li>- Cues to identify low health literacy [29–37,40,42,51]</li> <li>- Formal identifiers of health literacy [34,35,38,39,41,42,45,48,49]</li> <li>- Impact of limited health literacy on patients [29–32,34,36,39,41–45,49,50,52]</li> </ul>
<i>Objective B. To teach skills: Professionals develop patient-centred communication skills to address problems with health literacy.</i>	
2. Gathering and providing information to address functional health literacy.	<p>Gathering information</p> <ul style="list-style-type: none"> <li>- Active listening [32,42,53,54]</li> <li>- Observing non-verbal communication [32,35,53,54]</li> <li>- Asking open-ended questions [32,37,47,53–55]</li> <li>- Encouraging patients to ask questions [32,39,42,47,53–55]</li> <li>- Create a shame-free environment and responding to emotions [29,39,40,42,43,47,53,55]</li> </ul> <p>Providing information</p> <ul style="list-style-type: none"> <li>- Communicate clearly through plain language, avoidance of jargon, prioritization of information [29–35,37–40,42,44,47–49,51,55–57]</li> <li>- Using teach-back to check understanding [34,37–39,42,47,49,50,52,56,57]</li> <li>- Assess and write comprehensible patient information [29–31,34,35,39–41,47–49,51]</li> <li>- Show or draw simple pictures [34,35,37,57]</li> </ul>
3. Shared decision-making to address interactive health literacy.	<ul style="list-style-type: none"> <li>- Involve patients in shared decision-making [37,41,43,47,49,55,58–60]</li> <li>- Educate patients to participate in shared decision-making [46,53,57,61].</li> </ul>
4. Enabling self-management to address critical health literacy	<ul style="list-style-type: none"> <li>- Discuss and facilitate patients' preparation for a consultation [53,59,62–65]</li> <li>- Educate patients on self-management skills by repeating information and tailored education leaflets [33,39–41,45–47,53,56,57,59,62–68]</li> <li>- Personal approach with exploring barriers to adherence, formulating treatment goals, co-design an action plan, monitor self-care [37,41,43,46,52,53,55,59,62–68]</li> <li>- Use (telephone) follow-up consultations to monitor understanding and self-care [33,47,53,55,56,59,62,64–67]</li> </ul>
<i>Objective C. To support behaviour change: Professionals adopt, change and maintain behaviour to address health literacy problems</i>	
5. Changing behaviour to apply health literacy communication	<ul style="list-style-type: none"> <li>- Supporting behaviour change of professionals by influencing: Attitudes [69], Subjective norms [69] and Self-efficacy [70]:</li> <li>- Counselling low health literate patients [33,47,51]</li> <li>- Practice based assignment [40,41,43–45]</li> <li>- Feedback on clinical encounters with (standardised) patients [37,46,53,57,60].</li> </ul>

**Table 2**

Citations illustrating focus group themes of Stage 1 and 2.

Focus group theme	Citations
Stage 1: Perspectives on prototype-program	
1) Raising awareness on health literacy	"I also think you can use situations from practice. Yesterday I had an intake with someone of whom I think: hmmm. And when I spoke to my colleagues of social work and they think: hmmm. [ . . . ] and I encounter that regularly". (P2, Netherlands, Activity therapist)
2) Addressing Patient-centred communication	<p>"But you prefix it by saying well I have to say this to all the patients, your knowledge might be above this and you can come back to me and ask me more questions if you want more information. [ . . . ] it's how you deliver it as much as what you say. I think if you prefix it with a sentence that fits the context of who you're talking to". (P3, Ireland, nurse)</p> <p>"You know, it's kind of understanding it in context of the whole person because you know the health issue might be smoking but that's probably her only support if she is in isolation and I think to incorporate that [ . . . ] to discuss that within the training". (P1, Ireland, medical consultant)</p>
3) Applying health literacy communication	"Hmmm, by taking part in this focus group I become more aware and you get questions, yes now we have such a person (with low health literacy), what are we going to do about it? [ . . . ] There is the relevance, because there is just to gain in rehabilitation if you have good interventions and you can tailor (to the patient), and I think we all are very motivated for this". (P2, Netherlands, Activity therapist)
4) Various educational techniques	"I think there needs to be role-plays, patients are at different stages, that patients are taking on board the information they're given and I think a good way of learning that for the people been taught is by role-play and interactive; sometimes showing videos that medium works too". (P2, Ireland, social worker)
Stage 2: Feedback on pilot-training	
1) Valued training-components	<p>"Yes, [ . . . ] I look at it differently now [ . . . ] because of the theoretical (insights) I think I am more aware of the impact of having low health literacy and that it can cause, yes a lot of misunderstanding". (P1, Netherlands, social worker)</p> <p>"On the video I was using my, the word theory and no patient would understand what I mean by that. So I'm just more conscious of words I'm using now as well. So I'm hoping I'll be able to use, work out plainer language. If I ever want to use a term I'll explain myself, I wouldn't have done that before". (P3, Ireland, nurse)</p>
2) Experiential techniques	"Before the role paying I thought to be good about listening the patient. Now I know that it's not true. I wasn't be able to put myself in my patient's shoes. Now I'm more careful when my patient talk with me". (P1, Italy, researcher in diabetes)

Most training-programs [29–34,38–40,49,55] combined educational techniques: didactic techniques to develop knowledge and experiential techniques (roleplay, discussion) to develop skills [71,72].

### 3.1.2. Perspectives on prototype-program

Professionals of three countries provided rather similar responses, although they worked in various disciplines and health settings. In stage 1, professionals in three FGDs endorsed the prototype-program involving five training-components. Professionals recommended four themes for training: raising awareness of health literacy, addressing patient-centred communication, applying health literacy communication and various educational techniques (Table 2). In patient-centred communication, Irish professionals emphasized understanding the context of the whole person with low health literacy. Dutch professionals especially suggested exploring potential barriers and facilitators to application of health literacy communication in practice. Combining educational techniques promoted understanding of patients' health literacy problems and feedback on skills development.

### 3.2. Pilot training

We pilot-tested the training in three countries among thirteen health professionals. The training-program (Table 4) involved five training-components, offered during five 2-h workshops in the local language. Immediately after the last workshop professionals joined the FGDs and completed the post-questionnaire.

#### 3.2.1. Positive feedback on pilot-training

In stage 2, professionals in three FGDs valued training-components and experiential techniques (Table 2). They perceived patient-centred components helped them to address health literacy. Training resulted in more understanding of low health literacy, awareness of their jargon, improved self-efficacy and some adaptations in patient-interaction. Especially, experiential techniques helped professionals to relate health literacy to their practice and train oral and written communication skills. Peer supervision was perceived as too intangible to reflect on low health literacy issues encountered in patient interaction. Some professionals preferred roleplaying their own patient-scenarios. Professionals explicitly mentioned increased motivation and intention to apply health literacy communication.

#### 3.2.2. Pre-post questionnaire

Thirteen professionals completed the pre-post questionnaire, reporting improved self-rated health literacy communication skills. Table 3 shows domain-scores. Item-scores are provided in Appendix C.

### 3.3. Final training

The final training maintained the five training-components. Based on professionals' feedback we enhanced experiential techniques in workshops 2–4 by briefly presenting each skill alternated with roleplay (Table 4).

## 4. Discussion

We developed and piloted a comprehensive health literacy communication training with health professionals of three European countries. Five evidence-informed training-components were selected. Professionals expressed positive and consistent opinions regarding training-components and educational techniques. They reported strengthened knowledge and patient-centred skills to address functional, interactive and critical health literacy.

Similar to other studies [9,10,29,30,73,74], our training involves health literacy education and clear communication. Moreover, our training improves professionals' skills to enhance patient autonomy in decision-making [15,17,18,23,75], and strengthens intention to apply health literacy communication [69,70]. Professionals reported improved self-rated skills, comparable to studies from the US and Canada [10,29,31].

Although we expected differences, professionals of three European countries reported comparable perceptions with only minor variations. Another European study reported consensus on core-objectives in professional education [76]. The consensus in our study suggests potential for implementation of the training in other European countries.

Strength of this study is the diverse methods enabling us to develop an evidence-informed training in accordance with professionals' practice experiences. A limitation is that we conducted only one FGD per stage in each country, so we cannot assume data saturation [77]. The same partners were involved in developing and pilot-testing of the training, which may have introduced positive bias. Pre-post skills were self-reported, with limited power to detect changes. Study outcomes need confirmation in a larger professional sample and its impact on interaction with patients and health literacy levels should be evaluated.

## 5. Conclusion

A comprehensive health literacy communication training for health professionals in three European countries enhances perceived skills in addressing functional, interactive and critical health literacy.

### Practice implications

This training has potential for wider application in education and practice in Europe.

**Table 3**  
Domain scores of the Pre-post Training Questionnaire.

Domains	No. of items	Pre training Median (IQR) <sup>c</sup>	Post training Median (IQR)	p <sup>d</sup>
a. Health Literacy Knowledge <sup>a</sup>	4	2.8 (2.3–3.4)	4.0 (3.8–4.1)	0.003
b. Gathering information <sup>a</sup>	5	4.0 (3.4–4.2)	4.4 (3.9–4.5)	0.006
c. Providing information <sup>a</sup>	5	3.2 (2.8–3.3)	3.6 (3.4–4.0)	0.010
d. Shared decision-making <sup>b</sup>	3	3.3 (2.7–3.8)	3.7 (3.3–4.0)	0.024
e. Enabling self-management <sup>b</sup>	3	3.3 (3.0–4.3)	4.2 (3.3–4.3)	0.077

<sup>a</sup> Number of participants: N = 12.

<sup>b</sup> Number of participants: N = 13.

<sup>c</sup> IQR means Interquartile range.

<sup>d</sup> P-values are based on the Wilcoxon signed rank test. Scale domain a: 1) very poor to 5) excellent. Scale domain b–e: 1) never to 5) always.



**Table 4**

Final Health Literacy Communication Training Program, including adjustments.

Program overview	Adjustment <sup>a</sup>
<i>Workshop 1. Being aware of health literacy</i>	
- Introduction to health literacy: Video explaining health literacy and review of factsheet.	=
- Impact of low health literacy: Video of a patient with low health literacy, and group discussion.	=
- Assessment of the comprehensibility of written education materials for people with low health literacy.	+
- Identifying low health literacy using formal and informal identifiers	=
- Preparation of own roleplay scenario for workshops 2–4	+
<i>Workshop 2. Gathering and providing information to address functional health literacy</i>	
- Gathering information: presentation and roleplay.	=
- Providing information: presentation and roleplay.	=
<i>Workshop 3. Shared decision-making to address interactive health literacy</i>	
- Involving patients in shared decision-making: presentation, roleplay, visual recording of roleplay.	=
- Educating patients to participate in shared decision-making: presentation, roleplay, visual recording of roleplay.	=
<i>Workshop 4. Self-management to address critical health literacy</i>	
- Enabling self-management: presentation, roleplay, visual recording of roleplay.	=
<i>Workshop 5. Applying health literacy communication</i>	
Activities to enhance positive attitudes, social norms, self-efficacy and motivation so as to strengthen intentions and support behaviour change of professionals:	
- Summary of health literacy communication skills and sharing experiences with reviewing visual recording.	=
- Peer supervision to reflect on low health literacy issues encountered in patient interaction.	x
- Practice assignment to develop a health literacy action plan or communication tool	+
- Power pitch; brief presentation how to anticipate barriers and apply health literacy communication in practice.	=

<sup>a</sup> An “=” indicates the activity remained, “+” indicates an added activity, “x” means a deleted activity.

## Disclosure

Marise S. Kaper wrote the first draft and subsequent versions of the manuscript. All authors listed declare that they are responsible for this manuscript, and that they have participated in the (1) concept and design, (2) collection, analysis and interpretation of the data, (3) revision of the article, and all have approved the final article as submitted. The authors agree with its submission to *Patient Education and Counseling*.

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## Conflicts of interest

None.

## Ethics

The authors confirm that all personal identifiers have been removed or disguised so that person(s) described are not identifiable and cannot be identified through the details of the story.

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## Appendix A Supplementary data

Supplementary data associated with this article can be found, in the online version, at <http://dx.doi.org/10.1016/j.pec.2017.07.017>.

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